

4.2.5.7 Cultural and Paleontological Resources

No Action Alternative

Under this alternative, DOE would continue the existing and planned missions at ORR. This includes the continued storage of HEU material at Y-12 in stabilized form pursuant to DNFSB Recommendation 94-1. Any impacts to cultural or paleontological resources from these missions would be independent of the proposed action and would be addressed through separate NHPA, *American Indian Religious Freedom Act*, and *Native American Graves Protection and Repatriation Act* regulatory compliance procedures. In May 1994, a Programmatic Agreement was executed among the DOE Oak Ridge Operations Office, the Tennessee SHPO, and the Advisory Council on Historic Preservation regarding the management of historic and cultural properties at ORR. This agreement was administered to satisfy DOE's responsibilities regarding Sections 106 and 110 of the NHPA and requires DOE to develop a cultural resources management plan for ORR and conduct cultural resources surveys as required.

Upgrade Alternative

Preferred Alternative: Modify Existing Y-12 Plant for Continued Highly Enriched Uranium Storage

Under this alternative, existing buildings would be modified at Y-12 to accommodate ORR nonsurplus HEU material. No additional land would be required for construction or operation of the facilities. New construction and building modification pose the greatest threat to prehistoric, historic, and paleontological resources. Operation would not have a direct effect on these resources. Impacts to archaeological and paleontological resources are not likely as a result of this alternative because it would involve the upgrade of five existing facilities (9212 E-Wing Vault, 9204-2 First Floor, 9202E First Floor, 9215, and 9998). Four of these facilities are NRHP-eligible historic resources based on their association with World War II. They would be part of a proposed Y-12 Plant National Register Historic District. No Native American resources have been identified at Y-12. Consequently, no impacts to Native American resources are expected to result under this alternative.

Collocation Alternative

Construct New Plutonium Storage Facility; Maintain Existing Highly Enriched Uranium Storage Facilities at Y-12 Plant

Under this alternative, a new facility would be constructed east of K-25 and west of ORNL to accommodate all Pu material within the scope of this PEIS and existing facilities at Y-12 would continue to store ORR nonsurplus HEU material. Land to be disturbed during the construction of this facility would total 58.5 ha (144 acres) and the total operational land disturbance would be 56 ha (138 acres). A reduced-access buffer zone would exist around the facility. [Text deleted.] Construction and operation can have an impact on Native American resources by affecting traditional plant and animal communities through construction and by reducing access to traditional use areas during operation. Paleontological resources can also be affected through new construction, however, those known to occur at ORR are relatively common fossils with low research potential.

Survey work would be conducted prior to construction to identify any cultural resources in the area. A portion of this area on both sides of Bear Creek Road was surveyed prior to construction of the proposed Exxon Nuclear Facility, which was never built (OR UTN 1975a:iii). Some prehistoric sites were identified near the Clinch River, and the potential for sites along the smaller creeks exists. In addition, remains of a number of early 20th-century frame houses and mid-to-late 19th-century log houses and outbuildings are located within the project area. Prehistoric site types that are known to occur at ORR include remains of prehistoric villages, burial grounds, quarries and lithic workshops, and shell scatters. One NRHP-eligible prehistoric site has been identified near K-25, on the Clinch River. Historic resources may include standing structures, as well as remains of dwellings, road traces, cemeteries, and trash scatters. Resources such as these may occur in the area to be

disturbed. Some Native American resources may be affected by construction and operation of the facility. These resources, should any exist, would be identified through consultation with the potentially affected tribes.

Construct New Plutonium Storage Facility and Modify Existing Highly Enriched Uranium Storage Facilities at Y-12 Plant

This alternative involves upgrades to facilities at Y-12 and the construction of a new Pu storage facility east of K-25 and west of ORNL. Land disturbance during construction would total 58.5 ha (144 acres). The operational land requirements would be 56 ha (138 acres). Impacts to cultural and paleontological resources at Y-12 would be similar to those described under the previously discussed Collocation Alternative, including creation of a 1.6-km (1-mi) buffer zone.

Construct New Plutonium and Highly Enriched Uranium Storage Facilities

This option involves the construction of a new facility east of K-25 and west of ORNL to accommodate all Pu and HEU material within the scope of this PEIS. Consequently, the land requirements during construction and operation are greater than those discussed under the previous collocation options. Construction of this facility would disturb 89.5 ha (221 acres) of land. The operational requirement would be 87 ha (215 acres). A reduced-access buffer zone would be created around the facility. Based on location and land requirements, the potential for impacts to cultural resources under this option would be similar to those described under the previous options. A slightly larger land requirement results in a slightly greater potential for impacts.

Subalternative Not Including Strategic Reserve and Weapons Research and Development Materials

Under this subalternative, facility and other resource requirements will be almost the same as the No Action Alternative, the Upgrade Alternative, and the Collocation Alternative. Therefore, impacts to cultural and paleontological resources would be equal to those previously discussed. [Text deleted.]

Phaseout

No acreage is expected to be disturbed during phaseout. Consequently, no impacts to archaeological sites or paleontological remains are anticipated. Some NRHP-eligible historic structures may be affected by this alternative, depending on the tasks involved with phaseout. No resources of Native American importance have been identified at Y-12, so impacts to these resources are not expected.